

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Piedmont Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

James River Cogeneration Company
912 East Randolph Road, Hopewell, Virginia
Permit No. PRO-50950

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Cogentrix, Inc. has applied for a Title V Operating Permit for its James River Cogeneration Company (Hopewell) facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:_____ Date:_____

Air Permit Manager:_____ Date:_____

Deputy Director:_____ Date:_____

FACILITY INFORMATION

Permittee/Facility

James River Cogeneration Company
912 East Randolph Road
Hopewell, Virginia

County-Plant Identification Number: 670-0055

SOURCE DESCRIPTION

NAICS 221112 and SIC Code: 4911 - Electric power generation, transmission, or distribution.

James River Cogeneration Company is a cogeneration plant that combusts fuel in 6 stoker fired boilers to produce steam. A portion of the steam is sold for industrial uses. The rest is used to drive 2 turbine-generators to provide electricity, which is sold to Virginia Power. The major units at the facility are the 6 boilers. 3 boilers are connected to 1 turbine generator, and the 3 boilers are exhausted through a common stack. Each boiler is rated at approximately 200 MMBtu per hour and has a maximum dependable capacity of about 215 MMBtu per hour. The boilers are permitted for the burning of coal and E-Fuel. Boilers 1C and 2C are also permitted to burn distillation residue and used oil. However, this option has never been exercised. The facility wants to retain the ability to burn these fuels in future operations. The boilers are controlled by pulse jet fabric filter baghouses. The combustion gases from three baghouses exhaust through a common stack.

Other emission sources on the plant site include the solid fuel handling operations and the ash handling operations. Rail cars deliver solid fuel to the site and unload into underground hoppers. The hoppers deliver the solid fuel onto a conveyor belt that transports the solid fuel to the storage yard. Solid fuel is stacked onto a pile over another underground hopper. From this hopper, solid fuel is fed onto a conveyor belt for delivery into the plant where it is stored in a bunker for each boiler. Dust emissions from the solid fuel handling operations are controlled by use of a wet spray on the unloading hoppers when dusty conditions exist. The ash produced from the fuel combustion and collected by the boiler baghouse is collected and pneumatically conveyed to a storage silo. The ash is both bottom ash and fly ash. The ash is unloaded from the silos into trucks using a wet mixer pugmill for dust suppression.

The facility is a Title V major source of PM₁₀, SO₂, NO_x, CO, HCl, HF, and sulfuric acid mist. This source is located in an attainment area for all pollutants, and is a PSD major source. The facility was previously permitted under a PSD Permit issued on June 12, 1986, and most recently amended on July 30, 2002. The six stoker fired boilers are subject to the NO_x Budget Trading Program that was effective May 31, 2004.

Since the original Title V was written on May 8, 2001, there have been two amendments:

- February 24, 2004 – Title V amended to include the NO_x Budget Trading Program and to include the flue gas recirculation and methane reburn controls for NO_x that had been previously permitted in the July 30, 2002 PSD permit as a PCP NSR amendment.
- March 24, 2005 – Title V amended to create more consistent NO_x monitoring system span values that comply with the requirements of both 40 CFR 60.48b(e) and 40 CFR Part 75 (NO_x SIP monitoring).

All amended changes have been incorporated into this renewal Title V and SOB.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. The facility is inspected once a year. The last inspection was conducted on June 15, 2005 and the facility was found to be in compliance. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time. This facility has not received any notices of violation since it was constructed.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following :

Emission Unit ID	Emission Unit Description/construction date	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Stack ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
1A	Foster-Wheeler stoker boiler/1986	175,000 lbs steam/hr 200 MMBtu/hr	Fabric filter baghouse: Wheelabrator-Frye MDL 168 Series 6P with a control efficiency of 99.1%	1A	001	PM	6/20/2000
1B	Foster-Wheeler stoker boiler/1986	175,000 lbs steam/hr 200 MMBtu/hr	Fabric filter baghouse: Wheelabrator-Frye MDL 168 Series 6P with a control efficiency of 99.1%	1B	001	PM	6/20/2000
1C	Foster-Wheeler stoker boiler/1986	175,000 lbs steam/hr 200 MMBtu/hr	Fabric filter baghouse: Wheelabrator-Frye MDL 168 Series 6P with a control efficiency of 99.1%	1C	001	PM	6/20/2000
2A	Foster-Wheeler stoker boiler/1986	175,000 lbs steam/hr 200 MMBtu/hr	Fabric filter baghouse: Wheelabrator-Frye MDL 168 Series 6P with a control efficiency of 99.1%	2A	002	PM	6/20/2000
2B	Foster-Wheeler stoker boiler/1986	175,000 lbs steam/hr 200 MMBtu/hr	Fabric filter baghouse: Wheelabrator-Frye MDL 168 Series 6P with a control efficiency of 99.1%	2B	002	PM	6/20/2000
2C	Foster-Wheeler stoker boiler/1986	175,000 lbs steam/hr 200 MMBtu/hr	Fabric filter baghouse: Wheelabrator-Frye MDL 168 Series 6P with a control efficiency of 99.1%	2C	002	PM	6/20/2000
Solid Fuel Handling							
FS3	Solid fuel unloading and stock out: unloading hopper, covered conveyor, stock out tube	600 tons solid fuel/hour	Water spray/wet dust suppression	3	Fugitive	PM	6/20/2000
1-2A	Boiler 1A solid fuel storage bunker	270 tons solid fuel/hour	Fabric filter baghouse: Dalmatic DLMV15 with a control efficiency of 99.1%	1-2A	1-2A	PM	6/20/2000
1-2B	Boiler 1B solid fuel storage bunker	270 tons solid fuel/hour	Fabric filter baghouse: Dalmatic DLMV15 with a control efficiency of 99.1%	1-2B	1-2B	PM	6/20/2000
1-2C	Boiler 1C solid fuel storage bunker	270 tons solid fuel/hour	Fabric filter baghouse: Dalmatic DLMV15 with a control efficiency of 99.1%	1-2C	1-2C	PM	6/20/2000

Emission Unit ID	Emission Unit Description/construction date	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Stack ID	Pollutant Controlled	Applicable Permit Date
2-2A	Boiler 2A solid fuel storage bunker	270 tons solid fuel/hour	Fabric filter baghouse: Dalamatic DLMV15 with a control efficiency of 99.1%	2-2A	2-2A	PM	6/20/2000
2-2B	Boiler 2B solid fuel storage bunker	270 tons solid fuel/hour	Fabric filter baghouse: Dalamatic DLMV15 with a control efficiency of 99.1%	2-2B	2-2B	PM	6/20/2000
2-2C	Boiler 2C solid fuel storage bunker	270 tons solid fuel/hour	Fabric filter baghouse: Dalamatic DLMV15 with a control efficiency of 99.1%	2-2C	2-2C	PM	6/20/2000
Unit 1 Ash System (total system rating of 4 tons of ash/hour)							
1-3	Storage Silo		Bagfilter: A-S-H Bagvent with a control efficiency of 99%	1-3A	1-3A	PM	6/20/2000
1-3	Vacuum pump		Filter: In line cartridge filter with a control efficiency of 99% Cyclone: A-S-H Co. T-42 primary collector with a control efficiency of 85% Bag filter: A-S-H Co. T-42 w/Micropulsair Mdl 42-8-18" Hg with a control efficiency of 99%	1-3B 1-3E 1-3F	1-3B	PM	6/20/2000
1-3	Vacuum pump		Filter: In line cartridge filter with a control efficiency of 99% Cyclone: A-S-H Co. T-42 primary collector with a control efficiency of 85% Bag filter: A-S-H Co. T-42 w/Micropulsair Mdl 42-8-18" Hg with a control efficiency of 99%	1-3C 1-3E 1-3F	1-3C	PM	6/20/2000
1-3	Wet unloader		Pugmill: A-S-H C-40 pugmill with a control efficiency of 85%	1-3D	1-3D	PM	6/20/2000
Unit 2 Ash System (total system rating of 4 tons of ash/hour)							
2-3	Storage Silo		Bagfilter: A-S-H Bagvent with a control efficiency of 99%	2-3A	2-3A	PM	6/20/2000

Emission Unit ID	Emission Unit Description/construction date	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Stack ID	Pollutant Controlled	Applicable Permit Date
2-3	Vacuum pump		Filter: In line cartridge filter with a control efficiency of 99% Cyclone: A-S-H Co. T-42 primary collector with a control efficiency of 85% Bag filter: A-S-H Co. T-42 w/Micropulsair Mdl 42-8-18" Hg with a control efficiency of 99%	2-3B 2-3E 2-3F	2-3B	PM	6/20/2000
2-3	Vacuum pump		Filter: In line cartridge filter with a control efficiency of 99% Cyclone: A-S-H Co. T-42 primary collector with a control efficiency of 85% Bag filter: A-S-H Co. T-42 w/Micropulsair Mdl 42-8-18" Hg with a control efficiency of 99%	2-3C 2-3E 2-3F	2-3C	PM	6/20/2000
2-3	Wet unloader		Pugmill: A-S-H C-40 pugmill with a control efficiency of 85%	2-3D	2-3D	PM	6/20/2000

EMISSIONS INVENTORY

The following table lists the facility's potential to emit of criteria air pollutants and non HAP, non VOC toxic air pollutants.

Pollutant	PTE in tons/yr
PM ₁₀	115
SO ₂	7,992
NO _x	3,156
CO	3,156
HCl	259
HF	32
Sulfuric Acid Mist	25

A copy of the 2004 permit application emission inventory is attached. Emissions are summarized in the following tables.

Emissions are summarized below and are based on the 2004 emissions inventory:

2004 Criteria Pollutant Emissions in tons/year					
Emission Unit	VOC	CO	SO ₂	PM ₁₀	NO _x
Boilers 1A, 1B, and 1C exiting stack 1	2.4	169.9	3,376.3	1.5	800.4
Boilers 2A, 2B, and 2C exiting stack 2	2.4	172.5	3,428.7	1.5	767.8
Solid fuel storage bunkers 1-2A, 1-2B, 1-2C, 2-2A, 2-2B, 2-2C and solid fuel unloading & stock out FS3				0.04	
Ash Systems 1-3 and 2-3				0.02	
Total	4.8	342.4	6,805	3.1	1,568.2

2004 Hazardous Air Pollutant Emissions in tons/year				
Pollutant Emissions, tons/yr	Boilers 1A, 1B, and 1C exiting stack 1	Boilers 2A, 2B, and 2C exiting stack 2	Solid fuel storage bunkers 1-2A, 1-2B, 1-2C, 2-2A, 2-2B, 2-2C, and solid fuel unloading & stock out FS3	Ash systems 1-3 and 2-3
2,4-Dinitrotoluene	2.50E-5	3.0E-5		
2-Chloroacetophenone	6.85E-4			
Acetaldehyde	0.0557	5.65E-3		
Acetophenone	1.47E-3	1.49E-3		
Acrolein	0.0238	0.0288		
Antimony Compounds	6.95E-4	7.05E-4	2.04E-6	9.2E-7
Arsenic Compounds	9.8E-4	9.95E-4	1.02E-6	2.07E-5
Benzene	0.127	0.129		
Benzyl Chloride	0.0683	0.0694		
Beryllium Compounds	8.0E-5	8.5E-5	5.3E-7	1.18E-6
Biphenyl	1.65E-4	1.7E-4		
Bis(2-ethylhexyl) phthalate (DEHP)	7.13E-3	7.24E-3		
Bromoform	3.81E-3	3.87E-3		

2004 Hazardous Air Pollutant Emissions in tons/year				
Pollutant Emissions, tons/yr	Boilers 1A, 1B, and 1C exiting stack 1	Boilers 2A, 2B, and 2C exiting stack 2	Solid fuel storage bunkers 1-2A, 1-2B, 1-2C, 2-2A, 2- 2B, 2-2C, and solid fuel unloading & stock out FS3	Ash systems 1-3 and 2-3
Cadmium Compounds	6.4E-4		8.2E-8	5.9E-7
Carbon disulfide	0.0127	0.0129		
Chlorobenzene	2.15E-3	2.18E-3		
Chloroform	5.76E-3	5.85E-3		
Chromium Compounds	1.35E-3	1.36E-3	4.88E-7	4.34E-6
Cobalt	7.15E-4	7.3E-4	1.04E-6	4.19E-6
Cumene	5.15E-4	5.25E-4		
Cyanide Compounds	0.195	0.198		
Dimethyl sulfate	4.69E-3	4.76E-3		
Ethyl chloride (Chloroethane)	4.1E-3	4.17E-3		
Ethylbenzene	9.18E-3	9.32E-3		
Ethylene dibromide (Dibromoethane)	1.15E-4	1.2E-4		
Ethylene dichloride (1,2-Dichloroethane)	3.91E-3	3.97E-3		
Formaldehyde	0.0234	0.0238		
Hexane	6.54E-3	6.65E-3		
HCl	117.2	119.0		
Hydrogen fluoride (hydrofluoric acid)	14.65	14.87		
Isophorone	0.0566	0.0575		
Lead	0.0012	1.19E-3	4.88E-7	9.4E-5
Manganese		1.56E-3	6.5E-7	3.92E-6
Mercury Compounds	8.11E-3	8.23E-3	4.1E-8	1.8E-8
Methyl bromide (Bromomethane)	0.0156	0.0159		
Methyl chloride (Chloromethane)	0.0518	0.0526		
Methyl chloroform (1,1,1-Trichloroethane)	1.96E-3	1.99E-3		
MTBE	3.42E-3	3.47E-3		
Methylene chloride (Dichloromethane)	0.0283	0.0288		
Methylhydrazine	0.0166	0.0169		
Methylmethacrylate	1.96E-3	1.99E-3		
Naphthalene	1.27E-3	1.29E-3		
Nickel	3.89E-3	3.94E-3	1.53E-6	6.45E-6
Phenol	1.56E-3	1.59E-3		
Phosphorus	4.88E-4	4.96E-3	2.0E-8	7.38E-7
Propionaldehyde	0.0371	0.0377		
Selenium	0.127	0.129	1.22E-6	5.55E-7
Styrene	2.44E-3	2.48E-3		
Sulfuric Acid Mist	12.38	8.92		

2004 Hazardous Air Pollutant Emissions in tons/year				
Pollutant Emissions, tons/yr	Boilers 1A, 1B, and 1C exiting stack 1	Boilers 2A, 2B, and 2C exiting stack 2	Solid fuel storage bunkers 1-2A, 1-2B, 1-2C, 2-2A, 2-2B, 2-2C, and solid fuel unloading & stock out FS3	Ash systems 1-3 and 2-3
Tetrachloroethylene (Perchloroethylene)	4.2E-3	4.27E-3		
Toluene	0.0234	0.0238		
Vinyl acetate	7.5E-4	7.55E-4		
Xylenes	3.62E-3	3.67E-3		

EMISSION UNIT APPLICABLE REQUIREMENTS -

Limitations

The following limitations are derived from the PSD permit dated 7/30/2002.

3. 6 boilers (1A, 1B, 1C, 2A, 2B, and 2C) controlled by baghouses.
(9 VAC 5-50-260)
4. Unloading hopper, stack out discharge, and live pile controlled by wet suppression system.
(9 VAC 5-50-260)
5. Ash silo vents to be controlled by bag filters.
(9 VAC 5-50-260)
6. Ash handling systems to be controlled by primary multi-cyclone followed by a bag filter.
(9 VAC 5-50-260)
7. Six solid fuel bunkers to be controlled by fabric filters.
(9 VAC 5-50-260)
8. Wet dust suppression system shall be operated and maintained at all times.
(9 VAC 5-50-260)
9. NO_x Emissions from the six boilers (1A, 1B, 1C, 2A, 2B, and 2C) shall be controlled by flue gas recirculation (FGR) and methane reburn as necessary to meet federal and/or state NO_x budget and trading programs.
(9 VAC 5-170-160 and 9 VAC 5-50-20 E)
10. CO emissions for the six boilers (1A, 1B, 1C, 2A, 2B, and 2C) shall be controlled with good operation and maintenance practices.
(9 VAC 5-50-20 E)
11. The permittee shall develop a plan for minimizing the CO emissions and other pollutant emission increases resulting from the installation of the FGR and methane reburn. This condition was altered from the NSR slightly do to changes in the NO_x Budget implementation. The NSR condition states that beginning on "May 1" 2004 the facility will begin implementing their plan and not exceed the allotted allowances. The Virginia SIP states that facilities will begin the requirements of the NO_x

Budget plan on May 31, 2004 - not May 1. All years after 2004, the facility NO_x budget requirements become effective on May 1.

(9 VAC 5-20-180 and 9 VAC 5-50-20 E)

12. Boilers to burn only bituminous coal and E-Fuel except for units 1C and 2C, which may also burn distillation residue and used oil.
(9 VAC 5-50-280)

13. Throughput not to exceed 430,992 tons of solid fuel annually. Units 1C and 2C shall consume no more than 1,500,000 gallons of residue or 25,000 gallons of used oil annually.
(9 VAC 5-50-280)

14. Sulfur content of the coal not to exceed 0.95% by weight, and ash content not to exceed 11% by weight.
(9 VAC 5-50-280)

15. Sulfur content of the E-Fuel not to exceed 0.73 percent by weight annually.
(9 VAC 5-80-20)

16. Emission limitations from the boilers 1A, 1B, 1C, 2A, 2B, and 2C:

Particulate matter	0.03 lbs/MMBtu	18.0 lbs/hr/stack	79.0 tons/yr/stack
Sulfur Dioxide	1.52 lbs/MMBtu	912.0 lbs/hr/stack	3,995.0 tons/yr/stack
Nitrogen Dioxide	0.6 lbs/MMBtu	360.0 lbs/hr/stack	1,576.8 tons/yr/stack
Carbon Monoxide	0.6 lbs/MMBtu	360.0 lbs/hr/stack	1,576.8 tons/yr/stack
Volatile Organic Compounds	0.003 lbs/MMBtu	2.1 lbs/hr/stack	9.0 tons/yr/stack

(9 VAC 5-50-280)

17. Emissions from the solid fuel bunkers not to exceed:

Particulate matter (9 VAC 5-50-260)	0.06 lbs/hour/bunker	0.05 tons/yr total all bunkers
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18. Emissions from the ash silos shall not exceed:

Particulate matter (9 VAC 5-50-260)	0.06 lbs/hr/silo	0.16 tons/year/silo
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19. Emissions from the hopper, conveyor stock out tube, and open storage pile shall not exceed:

Particulate matter (9 VAC 5-50-260)	0.322 lbs/hour	0.71 ton/year
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20. NO_x emissions starting in 2004, from May 1 to September 30 (inclusive) shall not exceed the allocations established in the NO_x federal or state implementation plan except as stated in Condition 21 of the 7/30/02 permit.

21. NO_x emissions may exceed the allowable allocations in the NO_x federal or state implementation plan and Condition 20 of the 7/30/02 permit as allowed in the emissions trading portions of the federal and/or state implementation program.
(9 VAC 5-170-160, 9 VAC 5-50-20, and 9 VAC 5-50-40)

22. The FGR and methane reburn systems and associated boilers shall be operated and maintained in a manner that is consistent with good air pollution control practices.
(9 VAC 5-170-160 and 9 VAC 5-50-20)
37. Reduce operations or shutdown if an ambient air quality standard may be violated.
(9 VAC 5-20-180 I)
38. Requirements for maintenance schedule, inventory of spare parts, written operating procedures, and operator training.
(9 VAC 5-50-20E)
39. Required to keep copy of permit on premises.
(9 VAC 5-170-160)

In addition to the limitations from this permit, the facility must also comply with emission limitations in **40 CFR 60 NSPS Db**. The following list highlights applicable requirements from Db.

60.41b Byproduct/waste: means any liquid or gaseous substance produced at chemical manufacturing plants or petroleum refineries and combusted in a steam generating unit for heat recovery or for disposal.

(The distillate residue is a liquid byproduct/waste under this definition.)

60.43b(f) ...shall cause to be discharged into the atmosphere any gases that exhibit greater than 20% opacity (6 minute average) except for one 6 minute period per hour of not more than 27% opacity.

60.43b(g) The particulate matter and opacity standards apply at all times, except during periods of startup, shutdown, or malfunction.

60.44b(a)(3)(ii) ...no owner or operator of an affected facility that is subject to the provisions of this section and that combusts only coal, oil or natural gas shall cause to be discharged into the atmosphere...any gases that contain NO_x in excess of 0.6 lbs/MMBtu.

(This limit is applicable to units 1A, 1B, 2A, and 2B. This limit is the same as the PSD limitation that was derived from BACT. Therefore, the table in the TV permit will also list this citation when listing the NO_x lbs/MMBtu limitation. Units 1C and 2C may also burn used oil (assumed to have the same limit as residual oil) and distillate residue (a byproduct/waste). Units 1C and 2C have the following limitation:

60.44b(e) ...no owner or operator of an affected facility that simultaneously combusts coal, oil, or natural gas with byproduct/waste shall cause to be discharged into the atmosphere any gases that contain NO_x in excess of the emission limit determined by the following formula:

$$En = \frac{[(ELgo * Hgo) + (ELro * Hro) + (ELc * Hc)]}{(Hgo + Hro + Hc)}$$

Where: En is the nitrogen oxides emission limit in lbs/MMBtu
 $ELgo$ is 0.2 lbs/MMBtu

Hgo is the heat input from the combustion of natural gas, distillate oil, and gaseous byproduct/waste
ELro is 0.4 lbs/MMBtu
Hro is the heat input from combustion of residual oil and/or liquid byproduct/waste
ELc is 0.6 lbs/MMBtu
Hc is the heat input from combustion of coal

(The boilers are high heat release rate boilers, therefore, 0.2 lbs/MMBtu and 0.4 lbs/MMBtu were chosen for the formula. The used oil and the distillate residue, which is also liquid, will have the limitation of 0.4 lbs/MMBtu. The Title V permit will reflect only the appropriate portions of this formula. The natural gas/distillate portion will be left out since the permittee has no allowable fuel that falls under this emission limitation.)

- 60.44b(h) NO_x standards under this section apply at all times including periods of startup, shutdown, or malfunction.
- 60.44b(i) ...compliance with the emission limits under this section is determined on a 30 day rolling average basis.
- 60.46b(a) The particulate matter emission standards and opacity limits ... apply at all times except during periods of startup, shutdown, or malfunction. The NO_x standards ... apply at all times.
- 60.49b(h)(3) Excess emissions of opacity are defined as all 6 minute periods during which the average opacity exceeds the standard.
- 60.49b(h)(4) NO_x excess emissions are defined as any calculated 30 day rolling average NO_x emission rate which exceeds the standard.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

- 9 VAC 5-50-100 "Monitoring" This standard is applicable to all CEMs and COMs. However, the requirements of 40 CFR 60 Appendices B and F are more stringent. Therefore, the requirements of 9 VAC 5-50-100 will not be included in the permit, but all monitoring requirements will have this citation in the citation listing.

Monitoring

A Compliance Assurance Monitoring (CAM) Plan for PM₁₀ was included in the application for the facility according to 40 CFR 64.2. This was due to the fact that the six (6) boilers each have a fabric filter baghouse as a means to control PM and PM₁₀ emissions, are subject to an emission limitation, and have uncontrolled PM and PM₁₀ emissions that are above major source thresholds. To incorporate this into the Title V permit, the following statement was inserted right after Section III. B, *Monitoring*.

"The following conditions, 2-5, 8, 12, and 13, are included in this Title V permit to implement the requirements of the CAM regulations (40 CFR 64)."

A Quality Improvement Plan (QIP) was also included for PM and PM₁₀ in the facility's application as part of the CAM Plan according to 40 CFR 64.8. Since the proposed plan was approved by the Department, the following Condition 14 was inserted in Section III.B:

"The permittee shall develop a Quality Improvement Plan (QIP) for the fabric filters if six excursions from the indicator specified in the Compliance Assurance Monitoring (CAM) Plan Fabric Filter for PM Control occur within a six month period, according to 40 CFR § 64.8." (9 VAC 5-80-110 and 40 CFR § 64.8)

Therefore, the CAM Plan for PM/PM-10 is now part of the Title V permit.

A CAM Plan was not needed from the facility for NO_x since the facility is exempt by 40 CFR 64.2 (b)(1)(vi) which states, "The requirements of this part shall not apply to any of the following emission limitations or standards...Emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method, as defined in §64.1." The previous Title V permit already required the facility to have NO_x CEMS to control NO_x emissions from NSPS. In addition, a CAM Plan was not needed from the facility for SO₂ emissions since SO₂ is not subject to an emission limitation.

The following conditions have been taken from the specific conditions of the PSD permit dated 7/30/2002:

- 25. Requires NO_x CEMS.
(9 VAC 5-50-40 and 40 CFR 60 Subpart Db)
- 26. Requires Opacity COMs.
(9 VAC 5-50-40 and 40 CFR 60 Subpart Db)
- 27. QA/QC monitors in accordance with 40 CFR 60 Appendix B and Appendix F.
(9 VAC 5-50-40)

The following requirements stem from 40 CFR 60 Subpart Db:

60.41b Steam generating unit operating day: means a 24 hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24 hour period.

(This definition is necessary to clarify the extent of monitoring required by the regulation. The current PSD permit does not go into any detail regarding the requirements of Db.)

- 60.46b(e)(2) ...shall determined compliance with the NO_x standards on a continuous basis through the use of a 30 day rolling average emission rate. A new 30 day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days.
- 60.48b(a) ...shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system.
- 60.48b(b)(1) ...shall install calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring nitrogen oxides emission discharged to the atmosphere.

- 60.48b(c) ...the NO_x monitor) shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
- 60.48b(d) The 1 hour average NO_x rates measured by the NO_x monitor and required under 60.13 (h) shall be expressed in lbs/million Btu heat input and shall be used to calculate the average emission rates. The 1 hour averages shall be calculated using the data points required under 60.13 (b). At least 2 data points must be used to calculate each 1 hour average.
- 60.48b(e) The procedures under 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.
- 60.48b(e)(1) The span value for a continuous monitoring system for measuring opacity shall be between 60 and 80 percent.
- 60.48b(e)(2) The span value for nitrogen oxides is 1000 for coal and $500(x+y)+1000(z)$ for mixtures where
x is the fraction of total heat input derived from natural gas
y is the fraction of total heat input derived from oil, and
z is the fraction of total heat input derived from coal
- (The mixture formula is necessary for 1C and 2C, which can burn used oil and distillation residue. For the Title V permit, the span value for NO_x monitoring systems shall be calculated as stated in 40 CFR 60.48b(e) (above) or adjusted as required by 40 CFR 75, Appendix A, Sections 2.1.2.1 and 2.1.2.3, whichever value is lower (Condition III.B.7). This wording was changed from the original to allow the facility to continue operating the NO_x monitoring system in accordance with 40 CFR 75, to satisfy the NSPS Subpart Db NO_x monitoring requirements, and to remove any uncertainty from the demonstration of compliance with both sets of regulations. A memo from EPA dated February 17, 2000, regarding "Alternative Monitoring for Cogeneration Facility" stated that "because low NO_x concentration is expected in the stack, a lower span value will be acceptable.")*
- 60.48b(e)(3) All span values computed for combusting mixtures of regulated fuels are rounded to the nearest 500 ppm.
- 60.48b(f) When nitrogen oxides emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7, Method 7a, or other approved reference methods to provide emission data for a minimum of 75% of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

THE FOLLOWING MONITORING REQUIREMENTS ARE TAKEN FROM 60.13, "MONITORING REQUIREMENTS"

- 60.13(a) ...all continuous monitoring systems required under applicable subparts shall be subject to the provision of this section upon promulgation of performance specifications for continuous monitoring systems under appendix B to this part and, if the continuous monitoring system is used to demonstrate compliance with emission limits on a continuous basis, appendix F to this part.

- 60.13(d)(1) Owners and operators of all continuous emission monitoring systems ... shall check the zero (or low level value between 0 and 20% of span value) and span (50 to 100% of span value) calibration drifts at least once daily in accordance with a written procedure. The zero and span shall, as a minimum, be adjusted whenever the 24 hour zero drift or 24 hour span drift exceeds two times the limits of the applicable performance specification in appendix B. The system must allow the amount of excess zero and span drift measured at the 24 hour interval checks to be recorded and quantified, whenever specified. For continuous monitoring systems measuring opacity of emission, the optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero and span drift adjustments except that for systems using automatic zero adjustments. The optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4 % opacity.
- 60.13(d)(2) For opacity measurements, minimum procedures shall include a method for producing a simulated zero opacity condition and upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photo detector assembly.
- 60.13(e) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required above, all CEMS/COMS shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:
- (1) For opacity, shall complete a minimum of once cycle of sampling and analyzing for each successive 10 second period and one cycle of data recording for each successive 6 minute period.
 - (2) All continuous monitoring systems except opacity shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15 minute period.
- 60.13(f) Devices to be installed to get representative measurements of emissions. Must use procedures for location of systems in the applicable PS of Appendix B.
- 60.13(h) For COMS, must reduce all data to 6 minute averages and for CEMS to 1 hour averages. 6 minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6 minute period. For CEMS, 1 hour averages shall be computed from 4 or more data points equally spaced over each 1 hour period. Data recorded during periods of continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph. ...

(The portion of this requirement requiring 4 data points for each hour is overridden by the requirement for only 2 data points for each hour in the NSPS 60.48b(d).)

Periodic Monitoring

The large emitting units at this facility are the 6 boilers. These boilers have monitors for NO_x and opacity. These monitors meet the requirements of periodic monitoring for these pollutants. The facility will use the pressure drop across each of the baghouses as a surrogate parameter for particulate matter emissions. The acceptable pressure drop may not exceed 10 inches water column. Pressure drops exceeding 10 inches water column will be considered indications that the facility may be out of

compliance. A lower limit to the pressure drop was not included in the permit since the boilers can operate at low load that produces a small pressure drop across the baghouse. Should a failure or malfunction occur that causes a low pressure drop across the baghouse, the opacity monitoring system would show a violation. The pressure drop will be measured and recorded once every twelve hours. The permit lays out the steps for determining if the deviation from the acceptable limit listed in the permit is a violation of the emission limit.

The SO₂ emission limitations are monitored via record keeping of sulfur content in the fuel. This is also an acceptable method for periodic monitoring of the SO₂ standards. The VOC and CO emissions from these boilers are not measured directly. Periodic monitoring for these limitations will be the requirement for use of good operational practices and good maintenance practices, as well as the requirement to keep maintenance records.

Additionally, the facility will be required to test for PM₁₀, VOC, CO, and SO₂ once per permit term. This frequency of testing was chosen based on the information in previous tests that showed the boilers operated well below their standards.

The facility also has many small emissions units: the solid fuel bunkers (1-2A through 2-2C), the ash systems (1-3 and 2-3), and the solid fuel unloading and stock out area (FS3). Each of these emissions units is subject to particulate limits and has control requirements. The control requirements consist of particulate filters, cyclones, a pugmill, and the use of wet suppression. The facility will be required to observe each discharge monthly for a brief period of time to determine if any visible emissions are present. If any visible emissions are present, the facility will be required to perform maintenance. If maintenance does not alleviate the visible emissions, the permittee will be required to perform a Method 9 to determine compliance with the opacity limits. No testing for particulate is deemed necessary for periodic monitoring because of the small size of these emission points. Each discharge is permitted for well below one ton of particulate a year, and therefore the expense of particulate testing would not be appropriate.

For the particulate filters and cyclones, periodic monitoring will also consist of requiring good maintenance practices, and record keeping requirements to document maintenance. For the pugmill and the wet suppression, consistent use of these work practices will constitute periodic monitoring since use of the pugmill and use of the binders ensure the emissions units meet their standards.

The facility will be required to keep records of times when these work practices were not used, of maintenance on the control equipment, as well records of the monthly visible emission observances.

Emission Limitation Demonstration:

Table III.A.1. in the Title V permit contains hourly and annual emission limitations for boilers 1A, 1B, 1C, 2A, 2B, and 2C. The following demonstrates the equations used to determine the emission limitations. This demonstration includes the emission factors and the maximum capacities of the equipment. The results of the calculations show that the PM₁₀, CO, VOC, and NO_x emissions are limited by the maximum rated capacity of the boilers. The results also show that the SO₂ emissions are limited by sulfur content and the maximum rated capacity of the boilers. Therefore, as long as the size of the boilers does not change and the sulfur content conditions are not violated, the source should not exceed the emissions limitations.

GIVEN: *Each boiler rated at 200 MMBtu/hr
 *3 boilers exit one stack

*Permit limits sulfur in coal to 0.95% by weight
*Average BTU value of coal is 12,500 Btu/lb

EFs: 0.6 lbs/MMBtu CO: BACT determination and manufacturer's guarantee
0.003 lbs/MMBtu VOC: State BACT determination and manufacturer's guarantee
0.03 lbs/MMBtu PM₁₀: BACT determination confirmed via stack testing
0.6 lbs/MMBtu NO_x: BACT determination confirmed via direct compliance monitor
1.52 lbs/MMBtu SO₂: BACT determination confirmed via sulfur monitoring

(CO, VOC, PM₁₀, and SO₂ will also be tested.)

FORMULA: (EF) x (rating) x (3 boilers/stack) = hourly stack emissions
(Hourly stack emissions) x (8760 hrs/year) x (1 ton/2000 lbs) = annual stack emissions

Pollutant	Hourly Stack Emissions Formula	Hourly Stack Emission
PM	0.03 lbs/MMBtu(200 MMBtu/hr)(3 boilers/stack)	18.0 lbs/hr/stack
SO ₂	0.0095 lbs S/lb coal(200 MMBtu/hr)(3 boilers/stack)(2 lbs SO ₂ /lbs)/(0.0125 MMBtu/lb coal)	912.0 lbs/hr/stack
NO _x	0.5 lbs/MMBtu(200 MMBtu/hr)(3 boilers/stack)	360.0 lbs/hr/stack
CO	0.6 lbs/MMBtu(200 MMBtu/hr)(3 boilers/stack)	360.0 lbs/hr/stack
VOC	0.003 lbs/MMBtu(200 MMBtu/hr)(3 boilers/stack)	1.8 lbs/hr/stack

E-Fuel is very similar to coal, and emissions of PT, PM₁₀, CO, and NO_x do not increase. SO₂ emissions decrease when the facility uses this fuel provided that the S content restrictions of the permit are followed. This decrease is shown in the following demonstration:

The SO₂ emissions for this facility should decrease with the use of the coal/E-Fuel mix because the E-Fuel has a lower weight percent of sulfur than the coal normally used at the facility. The PSD permit limits the facility to a coal sulfur content of 0.95% by weight. The average of recent coal deliveries is 0.92% by weight of sulfur on a dry basis. The E-Fuel averages about 0.73% by weight of sulfur on a dry basis. Analyses for these fuels are in the permit application submittal received on November 3, 1999, and average S content for coal shipments are in the submittal dated April 11, 2000 (fax).

Assume: 200 MMBtu/hr heat input to boiler
Heating value of coal: 13,000 Btu/lb
Heating value of E-Fuel: 12,300 Btu/lb
Sulfur in coal: 0.92%
Sulfur in pellet: 0.73%
Boiler to burn a mixture of 25% by weight E-Fuel and 75% by weight coal

Heating value of mix = (0.75*13,000) + (0.25*12,300) = 12,825 BTU/lb
Coal only fuel input = (200 MMBTU/hr) * (1lb/13,000 BTU) * (1ton/2,000 lbs) = 7.7 tons/hr
Mix fuel input = (200 MMBTU/hr) * (1 lb/12,825 BTU) * (1 ton/2,000 lbs) = 7.8 tons/hr

S content of mix = (0.75 * 0.92) + (0.25 * 0.73) = 0.8725%
Lbs SO₂ per ton coal = (38 * 0.92) = 34.96 (from AP-42, 9/98 Table 1.1-3)
Lbs SO₂ per ton E-fuel = (38 * 0.73) = 27.74

$$\text{Lbs SO}_2 \text{ per ton mix} = (0.75 * 34.96) + (0.25 * 27.74) = 33.16$$

$$\text{SO}_2 \text{ emissions from coal} = (34.96 \text{ lbs SO}_2 \text{ per ton fuel} * 7.7 \text{ tons/hr}) = 269.2 \text{ lbs/hr}$$

$$\text{SO}_2 \text{ emissions from coal, lbs/MMBtu} = (269.2 \text{ lbs/hr}) / (200 \text{ MMBtu/hr}) = 1.35 \text{ lbs/MMBtu}$$

$$\text{SO}_2 \text{ emissions from mix} = (33.16 \text{ lbs SO}_2 \text{ per ton mix} * 7.8 \text{ tons/hr}) = 258.6 \text{ lbs/hr}$$

$$\text{SO}_2 \text{ emissions from mix, lbs/MMBtu} = (258.6 \text{ lbs/hr}) / (200 \text{ MMBtu/hr}) = 1.29 \text{ lbs/MMBtu}$$

$$\% \text{ reduction of SO}_2 = (269.2 - 258.6) / 269.2 * 100 = 3.9\%$$

The facility will be required to keep records of the equations used and the pollutant specific emission factors used to calculate these hourly and annual emissions. These limitations will be part of the monitoring and record keeping sections of the Title V permit.

Record keeping

The following limitation is derived from the PSD permit issued July 30, 2002.

24. Requires record keeping of fuel throughput, ash and sulfur content records, calculations for average sulfur content, monitoring records, maintenance records, operator training, hours of use of FGR and methane reburn, NO_x emissions from during the control period, test data, and any records to show good maintenance and operational habitats.
(9 VAC 5-50-50)

The following requirements stem from 40 CFR 60, Subpart Db:

- 60.49b(d) Shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for coal, used oil, and distillation residue each calendar quarter. The annual capacity factor is determined on a 12 month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.
- 60.49b(f) Shall maintain records of opacity.
- 60.49b(g) Shall maintain records of the following information for each steam generating unit operating day:
1. Calendar date
 2. Average hourly nitrogen oxides emission rates in lbs/million Btu measured
 3. 30 day average nitrogen oxides emission rates in lbs/million Btu calculated at the end of each steam generating unit operating day from the measured hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days.
 4. ID of days when the calculated 30 day average of NO_x are in excess of the standard, with reasons for each excess emissions as well as a description of corrective actions taken.
 5. ID of days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.
 6. ID of times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data.

7. ID of F factor used for calculations, method of determination, and type of fuel combusted.
8. ID of times when pollutant concentration exceeded full span of the continuous monitoring system.
9. Description of modifications to CEMS that could affect the ability of the CEM to comply with PS 2 or 3.
10. Results of daily CEMS drift tests and quarterly accuracy assessments as required under Appendix F, Procedure 1.

60.49b(o) All records shall be maintained by owner for period for 2 years following the date of such record.

(For consistency with the Title V requirements, the permittee will be required to keep records for 5 years.)

In addition to the record keeping requirements from the PSD permit and the NSPS Db, the facility will be required to measure pressure drop once every twelve hours across each of the 6 baghouses. The purpose for this monitoring is to satisfy the periodic monitoring requirements of the Title V regulations and to ensure compliance with the particulate matter standard from each boiler. If the pressure drop deviates from the range listed in the permit, the facility will be required to keep records of actions taken. Also, the facility will be required to keep records of maintenance performed on each of the cyclones and baghouses associated with equipment other than boilers as well as the pollutant specific emission factors and equations used to calculate emissions from the boilers. The facility will be required to keep records of times when the pugmill was not in use or malfunctioned during ash loading operations and of times when wet suppression was not used on the solid fuel piles. The facility will be required to perform and keep records of monthly observations on all particulate sources other than the boilers to determine if there is an opacity problem. The facility will also be required to perform and record observations on the ash loader when the pugmills are not operating to ensure that the opacity standard is met. Lastly, the facility will be required to keep on hand the test data from stack tests required by this permit showing compliance with the short term criteria pollutant standards listed in Table III.A.1, with the exception of NO_x. All the record keeping requirements described in this paragraph are for the purpose of ensuring adequate periodic monitoring.

Testing

The following limitations are from the July 30, 2002 permit.

29. Stack testing for CO on one boiler when burning of E-Fuel commences.
(9 VAC 5-50-30, 9 VAC 5-80-1200, and 9 VAC 5-50-410)
30. Stack testing for CO on each stack with a retrofit FGR and methane reburn system.
(9 VAC 5-50-30, 9 VAC 5-80-1200)
31. Provision for test ports.
(9 VAC 5-50-30F)

The following requirements stem from 40 CFR 60 Subpart Db:

- 60.46b(d)(2)(i) To determine compliance with the particulate matter emission limits, Method 5 shall be used.

- 60.46b(d)(7) Method 9 is used for determining the opacity of stack emissions.
- 60.46b(e)(2) ...shall determine compliance with the nitrogen oxides emission standards on a continuous basis through the use of a 30 day rolling average emission rate. A new 30 day rolling average emission rate is calculated each steam generating unit operating day as the average of all the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days.

The Title V permit also contains a requirement for testing PM₁₀, CO, SO₂, and VOC emissions once per permit term. The facility may test one stack during any permit term within 18 months of initial permit issuance. The three boilers exhausting to that stack must be running at a minimum of 80% of maximum rated capacity.

Reporting

The following limitations are derived from the PSD permit issued July 30, 2002:

28. Quarterly CEM reports.
(9 VAC 5-50-50)
32. Reports for utilization comparisons for the July 30, 2002 PSD pollution control project exemption.
(9 VAC 5-170-160)

(This condition from the NSR permit dated July 30, 2002 has had the phrase "during which E-Fuel was burned" inserted in the first sentence. This terminology clarifies the intent of the condition in the 7/30/2002 permit, which is to ensure that the use of E-Fuel does not affect the facility's utilization rate. The facility's utilization rate when burning coal is not a factor in PSD applicability determinations since the original PSD permit allowed for the consumption of up to 430,000 tons of coal annually.)

33. FGR and methane reburn system notifications of commence construction, anticipated startup, and actual startup.
(9 VAC 5-50-50 A)

The following reporting requirements are from 40 CFR 60 Subpart Db:

- 60.49(h) Must submit excess emission reports of opacity for any calendar quarter during which there are excess emissions from the affected facility. If there are no excess emissions during the calendar quarter, shall submit a report semiannually stating no excess emissions occurred.
- 60.49b(h)(4)(i) Shall submit a quarterly report for NO_x containing information in 49b(g). All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter.
- 60.49b(v) May submit electronic quarterly reports for NO_x and opacity in lieu of submitting written reports. The format of each quarterly electronic report shall be coordinated with the Administrator. The electronic reports shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement, indicating whether compliance with the applicable emission standard and minimum data requirements were achieved during the reporting period. Before submitting reports in the

electronic format, the owner or operator shall coordinate with the Administrator to obtain their agreement to submit reports in this alternative format

In addition to the requirements from Subpart Db and the PSD permit, the Title V permit will contain reporting requirements stemming from 9 VAC 5-80-110 F.2.a.:

...the permit shall contain terms and conditions setting out all applicable reporting requirements and requiring the following:

- (a) Submittal of reports of any required monitoring at least every six months. All instances of deviations from permit requirements must be clearly identified in such reports. All reports must be certified by a responsible official.

These requirements will be the reporting of instances where pressure drop across the baghouse was not in the acceptable range, corresponding actions taken, instances where the pugmill was malfunctioning or where dust suppression was not adequate in solid fuel handling operations, instances where the sulfur content of the E-fuel and the sulfur and ash content of the coal exceeded the allowable limits, results of the once per permit term stack testing, results of all monthly observations, and results of all observations of the ash loaders when the pugmills are not used. The permittee requested that the semiannual reporting requirements be changed to quarterly to better coincide with other quarterly reporting requirements, mainly from NSPS.

The provision in General Condition, IX.C.3 (in the boilerplate TV permit) requires semiannual reporting no later than March 1 and September 1 of each calendar year. However, the specific conditions in the permit under "Reporting" require semiannual reporting at a minimum, and in most cases quarterly reporting. Therefore, the General Condition IX.C.3 has been changed slightly to ensure that the permit does not require both semiannual and quarterly reporting of the same data. The dates have been removed, and the phrase "at a minimum" has been added to provide consistency with the regulatory requirement found in 9 VAC 5-80-110 F.

Streamlined Requirements

The following conditions from the July 30, 2002 permit are not included in the TV permit. The reason for not including each condition is listed beside each condition number.
Specific conditions:

- 1&2 Location, operation, and equipment will be listed in TV permit as introductory information. NSR application information is not pertinent to TV permits.
- 23. 40 CFR 60 Db requirements will be spelled out in the TV permit. Also, a condition under "Limitations" in the Title V permit will state that the facility must operate in accordance with Subpart Db.

General conditions:

- 34, 35, 36, 39, 40, 41 These conditions are listed as part of the General Conditions of the TV boilerplate permit.

The following conditions from Subpart Db are not included in the TV permit. Reasons for each exclusion follow the requirement.

60.46b(e)(1) Initial compliance test requirements.

(This condition will not be included in the permit since the initial compliance test has already been conducted in accordance with this condition and showed that the facility met the standard.)

60.49b(a)(1) Initial notification including design heat input capacity, identification of fuels combusted.

60.49b(a)(3) Annual capacity factor.

60.49b(b) Submittal of initial performance test data and performance evaluations of the CEMS.

(These 3 conditions listed above will not be included since these notifications and test data have been sent in and approved.)

60.43b(a)(1)(i) ...shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter in excess of 0.05 lbs/MMBtu if the affected facility combusts only coal.

(The BACT determination of 0.03 lbs/MMBtu is more stringent and therefore takes the place of this requirement. The limit of 0.05 lbs/MMBtu will be streamlined out of the permit. However, the citation for the NSPS standard will be added to the citation listing in Table III.A.1.)

GENERAL CONDITIONS

The following Virginia Administrative Codes that have generally applicable requirements have been determined to be applicable:

- | | |
|--|---|
| 9 VAC 5-50-80 "New Source Standards for Visible Emissions" | This standard is applicable to all sources other than boilers 1A, 1B, 1C, 2A, 2B, and 2C. This standard states that no unit may emit more than 20% opacity except for one 6 minute period in any one hour of not more than 30% opacity as measured by Method 9. The units with this requirement have been listed under the "Limitations" portion of the Title V permit. |
| 9 VAC 5-50-90 "Standard for Fugitive Dust Emissions" | This standard is applicable to all fugitive discharges, in particular the transport, storage, and handling of the solid fuel. The facility is required to use wet suppression when moving solid fuel from the solid fuel pile, which supports this requirement. |
| 9 VAC 5-50-380 "Facility and Control Equipment Maintenance or Malfunction: | References 9 VAC 5-20-180, which states all equipment must be kept in good working order and that notification requirements apply if equipment is down for more than one hour. |

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting quarterly monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

STATE ONLY APPLICABLE REQUIREMENTS:

No state only applicable requirements apply to this facility.

FUTURE APPLICABLE REQUIREMENTS:

The facility is a major source of HAP's, but the facility is not applicable to any MACTs. No other future applicable requirements have been identified for this source.

INAPPLICABLE REQUIREMENTS:

1. The facility is not subject to the SO₂ requirements of Db because the construction of the facility commenced after June 19, 1984 but before June 19, 1986. The following citations show this exemption.

- | | |
|-----------|--|
| 60.40b(a) | The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984 and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 100 MMBtu/hour. |
| 60.40b(b) | Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification or reconstruction after June 19, 1984 but on or before June 19, 1986 , is subject to the following standards: <ol style="list-style-type: none">(1) Coal fired affected facilities having a heat input capacity between 100 and 250 MMBtu/hour inclusive, are subject to the particulate matter and nitrogen oxides standards under this subpart. |

Therefore, the facility is not subject to the SO₂ requirements for this subpart. The SO₂ requirements in the PSD permit are derived solely from BACT and NAAQS considerations.

2. MACT, Subpart DDDDD **does not apply** to this facility since the facility is exempt by 40 CFR 63.7491 (c), which states, "The types of boilers and process heaters listed are not subject to this subpart...An electric utility steam generating unit that is a fossil fuel-fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity, and supplies more than one-third of its potential electric output capacity, and more than 25 megawatts electrical output to any utility power distribution system for sale is considered an electric utility steam generating unit." As stated by the facility (see attached email dated January 3, 2006)
 - The potential electrical output is approximately 110 megawatts net to Dominion Power. Normal electric power sold to Dominion Virginia Power is 85 megawatts net. One third of 110 megawatts = 36.7 megawatts; therefore, the facility supplies more than one-third of its potential electric output capacity and 25 megawatts electrical output.

COMPLIANCE PLAN

No compliance plan is needed for this facility.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, record keeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation ¹ (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)
1-4	Turbine lube oil tank vent	Emissions level 9 VAC 5-80-720 B	VOC	n/a
2-4	Turbine lube oil tank vent	Emissions level 9 VAC 5-80-720 B	VOC	n/a
1-5	Cooling tower	Emissions level 9 VAC 5-80-720 B	PM	n/a
2-5	Cooling tower	Emissions level 9 VAC 5-80-720 B	PM	n/a
6	Diesel fuel storage tank	Emissions level 9 VAC 5-80-720 B	VOC	1,000 gal capacity
SK	Parts cleaner	Named activity 9 VAC 5-80-720 A 24	VOC	35 gals <0.07 tpy
5	Emergency diesel power fire pumps	Emissions level 9 VAC 5-80-720 B	PM, VOC, CO, NO _x , SO ₂	340 bhp
7	Oil/Water separator	Named activity 5-80-720 A 41	VOC	Emergency use only <5.0 tpy

¹The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

NO_x BUDGET TRADING PERMIT REQUIREMENTS

The following units are applicable to the NO_x Budget Trading -

Table X – 1 Facility NO _x Budget Units				
Facility Unit ID	NATS Account ID	Unit Name and description	Maximum Heat Capacity (MMBtu/hr)	Maximum Generation Capacity (1000 pounds steam per hour)
BLR01A	010377-BLR01A	Foster-Wheeler stoker boiler/1986	200	175
BLR01B	010377-BLR01B	Foster-Wheeler stoker boiler/1986	200	175
BLR01C	010377-BLR01C	Foster-Wheeler stoker boiler/1986	200	175
BLR02A	010377-BLR02A	Foster-Wheeler stoker boiler/1986	200	175
BLR02B	010377-BLR02B	Foster-Wheeler stoker boiler/1986	200	175
BLR02C	010377-BLR02C	Foster-Wheeler stoker boiler/1986	200	175

Standard Requirements

Monitoring requirements.

9 VAC 5-140-60 B.1 The owners and operators and, to the extent applicable, the NO_x authorized account representative of each NO_x Budget source and each NO_x Budget unit at the source shall comply with the monitoring requirements of Part I, Article 8 (9 VAC 5-140-700 et seq.).

9 VAC 5-140-60 B.2 The emissions measurements recorded and reported in accordance with (9 VAC 5-140-700 et seq.) (Subpart H of 40 CFR Part 97) shall be used to determine compliance by the unit with the NO_x Budget emissions limitation under paragraphs B.2.a through B.2.h.

Nitrogen oxides requirements.

9 VAC 5-140-60 C.1 The owners and operators of each NO_x Budget source and each NO_x Budget unit at the source shall hold NO_x allowances available for compliance deductions under 9 VAC 5-140-540 A, B, E, or F, as of the NO_x allowance transfer deadline, in the unit's compliance account and the source's overdraft account in an amount not less than the total NO_x emissions for the control period from the unit, as determined in accordance with Part I, Article 8 (9 VAC 5-140-700 et seq.), plus any amount necessary to account for actual utilization under 9 VAC 5-140-420 E for the control period or to account for excess emissions for a prior control period under 9 VAC 5-140-540 D or to account for withdrawal from the NO_x Budget Trading Program, or a change in regulatory status, of a NO_x Budget opt-in unit under 9 VAC 5-140-860 or 9 VAC 5-140-870.

- 9 VAC 5-140-60 C.2 Each ton of nitrogen oxides emitted in excess of the NO_x Budget emissions limitation shall constitute a separate violation of 9 VAC 5 Chapter 140, Part I, the Clean Air Act, and applicable Virginia Air Pollution law.
- 9 VAC 5-140-60 C.3 A NO_x Budget unit shall be subject to the requirements under 9 VAC 5-140-60 C.1 starting on the later of May 31, 2004, or the date on which the unit commences operation.
- 9 VAC 5-140-60 C.4 NO_x allowances shall be held in, deducted from, or transferred among NO_x Allowance Tracking System accounts in accordance with Part I, Article 5 (9 VAC 5-140-400 et seq.), Article 6 (9 VAC 5-140-500 et seq.), Article 7 (9 VAC 5-140-600 et seq.), and Article 9 (9 VAC 5-140-800 et seq.).
- 9 VAC 5-140-60C.5 A NO_x allowance shall not be deducted, in order to comply with the requirements under 9 VAC 5-140-60 C.1 for a control period in a year prior to the year for which the NO_x allowance was allocated.
- 9 VAC 5-140-60 C.6 A NO_x allowance allocated by the permitting authority or the administrator under the NO_x Budget Trading Program is a limited authorization to emit one ton of nitrogen oxides in accordance with the NO_x Budget Trading Program. No provision of the NO_x Budget Trading Program, the NO_x Budget permit application, the NO_x Budget permit, or an exemption under 9 VAC 5-140-50 and no provision of law shall be construed to limit the authority of the United States or the State to terminate or limit such authorization.
- 9 VAC 5-140-60 C.7 A NO_x allowance allocated by the permitting authority or the administrator under the NO_x Budget Trading Program does not constitute a property right.
- 9 VAC 5-140-60 C.8 Upon recordation by the administrator under Part I, Article 6 (9 VAC 5-140-500 et seq.), Article 7 (9 VAC 5-140-600 et seq.), or Article 9 (9 VAC 5-140-800 et seq.), every allocation, transfer, or deduction of a NO_x allowance to or from a NO_x Budget unit's compliance account or the overdraft account of the source where the unit is located is deemed to amend automatically, and become a part of, any NO_x Budget permit of the NO_x Budget unit by operation of law without any further review.

Excess emissions requirements The owners and operators of a NO_x Budget unit that has excess emissions in any control period shall:

- 9 VAC 5-140-60.D.1 *Surrender the NO_x allowances required for deduction under 9 VAC 5-140-540 D 1; and*
- 9 VAC 5-140-60.D.2 *Pay any fine, penalty, or assessment or comply with any other remedy imposed under 9 VAC 5-140-540 D 3.*

Recordkeeping and Reporting Requirements.

- 9 VAC 5-140-60 E.1 The following requirements concerning recordkeeping and reporting shall apply: Unless otherwise provided, the owners and operators of the NO_x Budget source and each NO_x Budget unit at the source shall keep on site at the source each of the following documents for a period of five years from the date the document is

created. This period may be extended for cause, at any time prior to the end of five years, in writing by the permitting authority or the administrator.

- 9 VAC 5-140-60 E.1 The account certificate of representation for the NO_x authorized account representative for the source and each NO_x Budget unit at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with 9 VAC 5-140-130; provided that the certificate and documents shall be retained on site at the source beyond such five-year period until such documents are superseded because of the submission of a new account certificate of representation changing the NO_x authorized account representative.
- 9 VAC 5-140-60 E.1 All emissions monitoring information, in accordance with Part I, Article 8 (9 VAC 5-140-700 et seq.), provided that to the extent that Part I, Article 8 (9 VAC 5-140-700 et seq.) provides for a three-year period for recordkeeping, the three-year period shall apply.
- 9 VAC 5-140-60 E.1 Copies of all reports, compliance certifications, and other submissions and all records made or required under the NO_x Budget Trading Program.
- 9 VAC 5-140-60 E.1 Copies of all documents used to complete a NO_x Budget permit application and any other submission under the NO_x Budget Trading Program or to demonstrate compliance with the requirements of the NO_x Budget Trading Program.
- 9 VAC 5-140-60 E.1 The NO_x authorized account representative of a NO_x Budget source and each NO_x Budget unit at the source shall submit the reports and compliance certifications required under the NO_x Budget Trading Program, including those under Part I, Article 4 (9 VAC 5-140-300 et seq.), Article 8 (9 VAC 5-140-700 et seq.), or Article 9 (9 VAC 5-140-800 et seq.).

Certification

- 9 VAC 5-50-30 and 9 VAC 5-140-300 The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Upon request from the Department, test ports will be provided at the appropriate locations.

Liability

- 9 VAC 5-140-100 F.1 Any person who knowingly violates any requirement or prohibition of the NO_x Budget Trading Program, a NO_x Budget permit, or an exemption under 9 VAC 5-140-50 shall be subject to enforcement pursuant to applicable State or Federal law.
- 9 VAC 5-140-100 F.2 Any person who knowingly makes a false material statement in any record, submission, or report under the NO_x Budget Trading Program shall be subject to criminal enforcement pursuant to the applicable State or Federal law.
- 9 VAC 5-140-100 F.3 No permit revision shall excuse any violation of the requirements of the NO_x Budget Trading Program that occurs prior to the date that the revision takes effect.

- 9 VAC 5-140-100 F.4 Each NO_x Budget source and each NO_x Budget unit shall meet the requirements of the NO_x Budget Trading Program.
- 9 VAC 5-140-100 F.5 Any provision of the NO_x Budget Trading Program that applies to a NO_x Budget source or the NO_x authorized account representative of a NO_x Budget source shall also apply to the owners and operators of such source and of the NO_x Budget units at the source.
- 9 VAC 5-140-100 F.6 Any provision of the NO_x Budget Trading Program that applies to a NO_x Budget unit or the NO_x authorized account representative of a NO_x budget unit shall also apply to the owners and operators of such unit. Except with regard to the requirements applicable to units with a common stack under Article 8 (9 VAC 5-140-700 et seq.), the owners and operators and the NO_x authorized account representative of one NO_x Budget unit shall not be liable for any violation by any other NO_x Budget unit of which they are not owners or operators or the NO_x authorized account representative and that is located at a source of which they are not owners or operators or the NO_x authorized account representative.

Effect on Other Authorities.

- (9 VAC 5-140-100 G) No provision of the NO_x Budget Trading Program, a NO_x Budget permit application, a NO_x Budget permit, or an exemption under 9 VAC 5-140-50 shall be construed as exempting or excluding the owners and operators and, to the extent applicable, the NO_x authorized account representative of a NO_x Budget source or NO_x Budget unit from compliance with any other provision of the applicable, approved State implementation plan, a federally enforceable permit, the Clean Air Act.

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The proposed permit was placed on public notice in the Richmond Times Dispatch from February 1, 2006 to March 2, 2006. A 45 day review from EPA was also conducted concurrently on February 1, 2006 to March 17, 2006. No comments were received during either review.

The initial Title V permit for this facility included a public participation. On January 29, 2001 a public notice was advertised in the Richmond Times-Dispatch that lasted 30-days and closed February 28, 2001. No public comments were received. EPA Comments received via email on February 28, 2001, and a signed version was received via US Postal service on March 2, 2001.

INITIAL DRAFT COMMENTS FROM EPA AND FACILITY (2001)

Below is a discussion of the EPA Comments for the initial proposal of the Title V permit: (Issued May 8, 2001)

1. General Comment: The permit contains a number of applicable requirements derived from 40 CFR part 60, subpart Db. You should add the appropriate citations from this subpart part to the citation of authority portion of the relevant permit conditions, particularly those that involve applicable requirement streamlining. Likewise, the appropriate citations from Virginia regulations that are streamlined with more stringent requirements from 40 CFR part 60, subpart Db should also be included with the relevant permit conditions.

The NSPS citations have been added to Table III.A.1 and Condition III.A.17. The citation of 9 VAC 5-50-100 has been added to all monitoring conditions not directly related to periodic monitoring requirements, and the citation of 9 VAC 5-50-50 has been added to all specific record keeping requirements not directly related to periodic monitoring requirements.

2. General Comment: We recommend that you use the emission unit identification number along with the proper name when referencing emission units within individual permit conditions. We feel identification numbers add clarity to the permit, particularly when referencing multiple emission units with the same or similar proper names.

The emission unit identification numbers have been added to each condition that previously did not specifically identify the units or pollution control devices being discussed.

3. Condition No. III.A.3: This condition requires the permittee to operate emission control equipment and use work practices identified in Table III.A.3 of the permit. You should amend to the table to include the relevant pollution device control efficiencies as contained in the underlying NSR permit, provided they are included in the NSR permit as applicable requirements.

The NSR permit for this equipment, which was originally issued in 1986 and most recently amended on July 30, 2002, does not contain any requirements regarding control efficiencies for the pollution control devices used at the facility. Therefore, no control efficiencies were added to Table III.A.3.

4. Condition No. III.A.5: This condition establishes the allowable sulfur content of the coal burned by the boilers [1A, 1B, 1C, 2A, 2B, 2C]. You should amend this condition to include the ash content limitation contained in the 07/30/2002 PSD permit issued to this facility.

This condition has been changed to reflect a sulfur content limitation as well as an ash content limitation in the coal. Associated record keeping and reporting requirements were also updated to reflect this condition.

5. Condition No. III.A.7: This condition limits the annual coal throughput of the boilers [1A, 1B, 1C, 2A, 2B, 2C]. You should amend the condition to indicate that the throughput limits apply to the boilers on a "combined" basis.

This condition has been changed to reflect that the solid fuel limitation, the used oil limitation, and the production residue limitation are combined limits.

6. Condition Nos. III.A.15 and III.B.10: These conditions discuss the averaging times for the NO_x emission limitations contained earlier in the permit. You should amend these conditions to indicate that the stated averaging time applies only to the 0.6 lbs-NO_x /MMBtu emission limit and not to the NO_x limits expressed in different units.

Both Conditions III.A.15 and III.B.10 have been changed to clarify that the conditions apply to limitations expressed in lbs/MMBtu.

7. Section III.B: This section provides the permittee's obligations for monitoring with respect to the limitation established in Section III.A of the permit. The permit lacks adequate periodic monitoring for the visible emissions requirements applicable to the coal- and ash-handling equipment [FS2, 1-2A, 1-2B, 1-2C, 2-2A, 2-2B, 2-2C and 1-3, 2-3]. You should amend the permit to require periodic examination of the visible emissions from these units or develop other permit conditions that provide for compliance with the visible emission limitations.

Conditions III.B.14 and III.B.15 have been added to the permit to require monthly observations of visible emissions from particulate sources and also observations of ash unloading when the pugmills do not operate. Associated record keeping and reporting conditions have been updated to reflect the need to keep records of the observations and any actions taken due to the observations as well as the need to report the compliance status of these particulate sources quarterly.

Likewise, the permit lacks adequate periodic monitoring for the PM, SO₂, VOC, and CO emission limits for the boilers [1A, 1B, 1C, 2A, 2B, 2C]. In addition to routine fuel sampling and emission calculation, you should amend the permit to require the permittee to perform stack testing at least once per permit term for the pollutants identified above. You should also modify the permittee's record keeping obligations to require that records regarding the above-mentioned monitoring be kept.

Condition III.D.3 has been added. This condition requires stack testing for the above mentioned pollutants on one stack once per permit term. The condition also requires that the 3 boilers exhausting to the stack be running at a minimum of 80% capacity each and that the tests be conducted within 18 months of initial permit issuance. Condition III.C.7 has been changed to reflect the requirement to keep these test records on hand.

8. Condition No. III.C.4: This condition pertains to the permittee's record keeping obligations regarding operation of the baghouses for the boilers. You should amend the condition to remove reference to the "periodic monitoring response plan" as discussed in the permit. The appropriate periodic monitoring strategy should be reflected with conditions within the permit itself. Reference to the periodic monitoring response plan elsewhere in the permit should be addressed in a similar fashion.

All references to submitting and maintaining a periodic monitoring response plan have been removed. Condition III.C.4 now references Condition III.B.13, which has been added to specifically delineate the steps required when differential pressure across a baghouse is higher than expected (10 inches water column).

9. Condition No. III.C.7: This condition contains the permittee's record keeping obligations regarding the PM, SO₂, VOC, and CO emission limits for the boilers [1A, 1B, 1C, 2A, 2B, 2C]. You should amend this condition to require the permittee to maintain records regarding actual emission rates of the boilers relevant to the limits

Condition III.C.7 has been amended to reflect this change.

10. Section V: This section identifies those permit conditions subject to the permit shield and any inapplicable requirements. This section lists 40 CFR 60.43b(a)(1)(i) as not being applicable to the permittee because a more restrictive limit applies from its NSR permit. While it is true that the limit in 40 CFR 60.43b(a)(1)(i) may be “streamlined” with the more stringent NSR limit, the limit of 40 CFR 60.43b(a)(1)(i) remains to be applicable. You should amend this section to remove the permit shield for 40 CFR 60.43b(a)(1)(i). You should also amend the citation authority section of Table III.A.1 to include the citation of the streamlined 40 CFR 60.43b(a)(1)(i) requirement.

Table III.A.1 now contains this citation. Also, the permit shield for 40 CFR 60.43b(a)(1) has been removed.

In addition to the above comments, the permittee also submitted comments during the review period for the final draft, prior to proposing the permit to EPA. These comments are as follows:

1. In Condition III.A.14, the requirement that the NO_x emission limitations in Table III.A.1 and Condition 2 apply at all times including startup, shutdown and malfunction stems from the requirement in 40 CFR 60.44b(h). How does this apply to the hourly emissions rates listed in Table III.A.1?

The limitations to which this condition applies are the limitations expressed in lbs/MMBtu. Condition III.A.14 will be clarified to ensure this meaning is conveyed.

2. Conditions III.B.1 and III.B.2 could be made clearer by adding the performance specification method as well as the Appendix in which they are found.

The corresponding performance specifications have been added to these conditions.

3. Condition III.C.7 is contradictory since it requires the use of emission factors and equations for actual emission calculations but also requires record keeping on stack testing.

The permit condition requires both types of documents be kept as separate and complimentary methods of determining compliance with applicable requirements.

4. Table III.D.1 should contain reference method M201 for PM₁₀ testing.

This reference method has been added to Table III.D.1.

During the 45 day proposal period, EPA Region 3 responded with the suggestion to add the phrasing in bold to condition III.B.14:

*...Any monthly observations of equipment that determines the existence of any visible emissions shall be followed up with a 40 CFR 69 Appendix A Method 9 visible emission evaluation unless the visible emission condition is corrected as expeditiously as possible **such that there are no visible emissions present and recorded....***

Since the added phrase merely clarified the intent of the condition, and no other changes were requested, this permit is considered ready for issuance.
